## This Page Is Inserted by IFW Operations and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

## IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.



#17 6.30

RAW SEQUENCE LISTING PATENT APPLICATION: US/09/111,911

DATE: 05/04/2000 TIME: 09:30:18

Input Set : A:\16153558.app

Output Set: N:\CRF3\05042000\I111911.raw

ENTERED

```
3 <110> APPLICANT: Wold, William S.M.
 5 <120> TITLE OF INVENTION: Inhibiting Apoptosis With Adenovirus RID Protein
 7 <130> FILE REFERENCE: 16153-5587
 9 <140> CURRENT APPLICATION NUMBER: 09/111,911
10 <141> CURRENT FILING DATE: 1998-07-08
12 <160> NUMBER OF SEQ ID NOS: 5
14 <170> SOFTWARE: PatentIn Ver. 2.0
16 <210> SEQ ID NO: 1
                                                                     ----
17 <211> LENGTH: 91
18 <212> TYPE: PRT
19 <213> ORGANISM: Adenovirus
21 <400> SEQUENCE: 1
22 Met Ile Pro Arg Val Leu Ile Leu Leu Thr Leu Val Ala Leu Phe Cys
25 Ala Cys Ser Thr Leu Ala Ala Val Ala His Ile Glu Val Asp Cys Ile
              20
28 Pro Pro Phe Thr Val Tyr Leu Leu Tyr Gly Phe Val Thr Leu Ile Leu
            35
                                 40
31 Ile Cys Ser Leu Val Thr Val Val Ile Ala Phe Ile Gln Phe Ile Asp 32 \phantom{0}55\phantom{0} 60
34 Trp Val Cys Val Arg Ile Ala Tyr Leu Arg His His Pro Gln Tyr Arg 35 65 70 75 80
37 Asp Arg Thr Ile Ala Asp Leu Leu Arg Ile Leu
                     85
                                          90
41 <210> SEQ ID NO: 2
42 <211> LENGTH: 69
43 <212> TYPE: PRT
44 <213> ORGANISM: Adenovirus
46 <400> SEQUENCE: 2
47 Ala Val Ala His Ile Glu Val Asp Cys Ile Pro Pro Phe Thr Val Tyr
                                          10
50 Leu Leu Tyr Gly Phe Val Thr Leu Ile Leu Ile Cys Ser Leu Val Thr 51 20 25 30
53 Val Val Ile Ala Phe Ile Gln Phe Ile Asp Trp Val Cys Val Arg Ile
54 35 40 45
56 Ala Tyr Leu Arg His His Pro Gln Tyr Arg Asp Arg Thr Ile Ala Asp
57 50 60
59 Leu Leu Arg Ile Leu
60 65
63 <210> SEQ ID NO: 3
64 <211> LENGTH: 132
65 <212> TYPE: PRT
66 <213> ORGANISM: Adenovirus
68 <400> SEQUENCE: 3
69 Met Lys Phe Thr Val Thr Phe Leu Leu Ile Ile Cys Thr Leu Ser Ala
70 1 10 15
72 Phe Cys Ser Pro Thr Ser Lys Pro Gln Arg His Ile Ser Cys Arg Phe
```

03Y 26 2039 TC 1500 MAIL ROOM RAW SEQUENCE LISTING DATE: 05/04/2000 PATENT APPLICATION: US/09/111,911 TIME: 09:30:18

Input Set : A:\16153558.app

Output Set: N:\CRF3\05042000\II11911.raw

```
75 Thr Arg Ile Trp Asn Ile Pro Ser Cys Tyr Asn Glu Lys Ser Asp Leu 76 35 40 45
78 Ser Glu Ala Trp Leu Tyr Ala Ile Ile Ser Val Met Val Phe Cys Ser
79 50 55 60
81 Thr Ile Leu Ala Leu Ala Ile Tyr Pro Tyr Leu Asp Ile Gly Trp Asn
82 65 70 75 80
84 Ala Ile Asp Ala Met Asn His Pro Thr Phe Pro Ala Pro Ala Met Leu
85 90 95
87 Pro Leu Gln Gln Val Val Ala Gly Gly Phe Val Pro Ala Asn Gln Pro 88 100 105 110
90 Arg Pro Pro Ser Pro Thr Pro Thr Glu Ile Ser Tyr Phe Asn Leu Thr
    115
                                   120
93 Gly Gly Asp Asp
94 130
97 <210> SEQ ID NO: 4
98 <211> LENGTH: 114
99 <212> TYPE: PRT
100 <213> ORGANISM: Adenovirus
102 <400> SEQUENCE: 4
103 Ser Pro Thr Ser Lys Pro Gln Arg His Ile Ser Cys Arg Phe Thr Arg 104 \, 1 \, 5 \, 10 \, 15
106 Ile Trp Asn Ile Pro Ser Cys Tyr Asn Glu Lys Ser Asp Leu Ser Glu 107 \phantom{\bigg|}20\phantom{\bigg|}25\phantom{\bigg|}30\phantom{\bigg|}
109 Ala Trp Leu Tyr Ala Ile Ile Ser Val Met Val Phe Cys Ser Thr Ile 110 \phantom{\bigg|}35\phantom{\bigg|}40\phantom{\bigg|}45\phantom{\bigg|}
112 Leu Ala Leu Ala Ile Tyr Pro Tyr Leu Asp Ile Gly Trp Asn Ala Ile
113 50 55 60
115 Asp Ala Met Asn His Pro Thr Phe Pro Ala Pro Ala Met Leu Pro Leu 116 65 70 75 80
118 Gln Gln Val Val Ala Gly Gly Phe Val Pro Ala Asn Gln Pro Arg Pro 119 85 90 95
121 Pro Ser Pro Thr Pro Thr Glu Ile Ser Tyr Phe Asn Leu Thr Gly Gly
122
                 100
                                           105
124 Asp Asp
128 <210> SEQ ID NO: 5
129 <211> LENGTH: 34427
130 <212> TYPE: DNA
131 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:
134 <223> OTHER INFORMATION: Description of Artificial Sequence: Plasmid
135
           Combining E.coli and Adenovirus Sequences
137 <400> SEQUENCE: 5
138 catcatcaat aatatacctt attttggatt gaagccaata tgataatgag ggggtggagt 60
139 ttgtgacgtg gcgcggggcg tgggaacggg gcgggtgacg tagtagtgtg gcggaagtgt 120
140 gatgttgcaa gtgtggcgga acacatgtaa gcgacggatg tggcaaaagt gacgtttttg 180
141 gtgtgcgccg gtgtacacag gaagtgacaa ttttcgcgcg gttttaggcg gatgttgtag 240
142 taaatttggg cgtaaccgag taagatttgg ccattttcgc gggaaaactg aataagagga 300
143 agtgaaatet gaataatttt gtgttactea tagegegtaa tategataag ettgatateg 360
```

DATE: 05/04/2000 TIME: 09:30:18 RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/111,911

Input Set : A:\16153558.app
Output Set: N:\CRF3\05042000\I111911.raw

				tgaaggtatc			
145	tcatctgcaa	caacatgaag	atagtgggtg	cggatggaca	ggaacaggag	gaaactgaca	480
146	ttccatttag	attgtggaga	aagtttgcag	ccaggaggaa	gctgcaatac	cagagctggg	540
147	aggagggcaa	ggaggtgctg	ctgaataaac	tggacagaaa	tttgctaact	gattttaagt	600
148	aagtgatgct	ttattattt	tttttattag	ttaaagggaa	taagatcttt	gagaccgcac	660
149	agggtcttaa	taagggtgca	gagatcctca	ggtccttgac	aaggtgagtg	aatgcagcct	720
150	tcggtttcta	ccgagtgctg	agttatggta	atgggctttt	ctcccaccat	gaccaccaat	780
151	ttctgacgct	tggttggcaa	cttgtagcta	aggcggtgtc	cggtggtatt	actgtcgtag	840
152	gtgactttgg	cctgctttac	cagacaaaag	ataccccttt	tgcactggtg	caagttaacc	900
153	atgtcttgga	gctcttgatt	catgcgctgt	tgctcggccg	ctgccctgcg	tctttctagc	960
154	aggcgctgct	ctgtaataat	tccgtccatt	tctagatcta	gggtgtcagt	catctcctcc	1020
155	tgttagatta	aagtagctga	tttcagtggg	ggtgggagaa	gtggggcgag	gctgattggc	1080
156	tgggacaaag	ccgccggcaa	caacttgttg	cagtggaagc	atagcgggcg	cggggaaagt	1140
157	tgggtggttc	atggcatcta	ttcgtttcca	gccaatgtca	aggtagggat	atatagctag	1200
158	ggctaagatg	gtactgcaga	acaccataac	agagatgatt	gcatataacc	aggcttcgga	1260
159	aagatcgctt	ttttcattgt	agcaacttgg	aatattccat	atacgagtga	atctgcatga	1320
160	tatatgtctt	tgaggcttgg	aggtcgggga	acaaaacgca	gatagggtgc	aaataatcag	1380
161	cagaaaagtc	acagtaaatt	tcataattaa	agaattctga	gaagatcagc	tatagtcctg	1440
162	tctctgtatt	gcggatggtg	cctgaggtac	gcaatgcgca	cacaaaccca	gtcaatgaac	1500
163	tgaatgaagg	cgatgactac	agtgacgagg	ctgcagatga	ggataagggt	gacaaatccg	1560
164	taaagcaggt	aaactgtgaa	aggtgggatg	caatctactt	cgatgtgagc	gaccgcggcc	1620
165	aatgtagagc	acgcacagaa	aagcgcaaca	agggtcaata	atataagaac	tcgaggaatc	1680
166	atgtctcatt	taatcatact	gtaaaagaag	agaacatggt	ttcagaccgt	ccaatctatg	1740
				gataggccta			
				aataataagg			
169	ggaaaaccac	cacaaqtcca	agctcgccca	gtcattgaca	aaggcatgaa	cttggggtaa	1920
				ggtgttgcga			
				gctgaagctg			
				tccaggaaag			
173	tataatcttq	cccqcctqqa	gcatatccca	catagagtaa	attgtccagg	ggaatacaag	2160
				tcaataaaac			
175	agataaagta	aggtacatac	caaagcaagc	gctgtaataa	gcagagcggt	ggaacaaaag	2280
176	gtgccagtgt	tctctaaaca	cttttqtqqq	ggccacaact	tgtactgttt	gctcatgtac	2340
				aatttataca			
				gtgtcacctg			
179	gcatacttgc	caattttgtc	tttgtggcga	ataataagct	tttcatgttc	tgtggtgcat	2520
180	tttataagag	tagtgcattc	attagettet	gatttaaatg	taacattgca	agctggttcc	2580
				actgccgcaa			
				gtttaaaaag		-	
				gaagtgctag			
				cagaaaaatt			
				cccagcaccc			
				tttggaaaaa			
				ggtgacgcac			
				acggtgtagt			
			-	ttgtaaatta			
				tgcaaaccgg			
				acaggatggc			
				gagatgacaa			
	-		-			-	

RAW SEQUENCE LISTING DATE: 05/04/2000 PATENT APPLICATION: US/09/111,911 TIME: 09:30:18

Input Set : A:\16153558.app

Output Set: N:\CRF3\05042000\I111911.raw

193 agggttagga cagttgcaaa ccacggtcag aacacaggga ccccgctccc gctccactag 3360 194 caggggggc ttggtaaact cccgaatcag gctacgtgta agetetacet gggtggtgag 3420 195 ccggacgccg tgcgccgggc cctcgatatg ctcttcgggc aattcaaagt aacaaaactc 3480 196 accggagecg egggeaaage acttgtggeg geggeagtgg tegaggtgtg teaggegeag 3540 197 tegetetgee tetecaetgg teatteagte gtageegtee geegagtett teaeegegte 3600 198 aaagttggga ataaactggt ccgggtagtg gccgggaggt ccagaaaagg ggttgaagta 3660 199 aaccqaaggc acgaactect caataaattg tagagtteca atgecteegg agegegete 3720 200 cgaggacgag gtctgcagag ttaggatcgc ctgacggggc gtaaatgaag agcggccagc 3780 201 gccgccgatc tgaaatgtcc cgtccggacg gagaccaaga gaggagctca ccgactcgtc 3840 202 gttgagctga atacctcgcc ctctgatttt caggtgagtt ataccctgcc cgggggggat 3900 203 ccgagctcgg taccaagett aagtttaaac gctagccage ttgggtctcc ctatagtgag 3960 204 tegtattaat ttegataage cagtaageag tgggttetet agttageeag agagetetge 4020 205 ttatatagac eteceacegt acaegeetac egeceatttg egteaatggg geggagttgt 4080 206 tacgacattt tggaaagtcc cgttgatttt ggtgccaaaa caaactccca ttgacgtcaa 4140 207 tggggtggag acttggaaat ccccgtgagt caaaccgcta tccacgccca ttgatgtact 4200 208 gccaaaaccg catcaccatg gtaatagcga tgactaatac gtagatgtac tgccaagtag 4260 209 gaaagtccca taaggtcatg tactgggcat aatgccaggc gggccattta ccgtcattga 4320 210 cgtcaatagg gggcgtactt ggcatatgat acacttgatg tactgccaag tgggcagttt 4380 211 accgtaaata gtccacccat tgacgtcaat ggaaagtccc tattggcgtt actatgggaa 4440 212 catacgtcat tattgacgtc aatgggcggg ggtcgttggg cggtcagcca ggcgggccat 4500 213 ttaccgtaag ttatgtaacg cggaactcca tatatgggct atgaactaat gaccccgtaa 4560 214 ttgattacta ttaataacta gtcaataatc aatgtcaacg cgtatatctg gcccgtacat 4620 215 cgcgaagcag cgcaaaacgc ctaaccctaa gcagattctt catgcaattc aagcttgtcg 4680 216 acagatettg ggcgtggctt aagggtggga aagaatatat aaggtggggg tettatgtag 4740 217 ttttgtatct gttttgcagc agccgccgcc gccatgagca ccaactcgtt tgatggaagc 4800 218 attgtgaget catatttgac aacgegeatg ecceeatggg eeggggtgeg teagaatgtg 4860 219 atgggeteca geattgatgg tegeceegte etgecegeaa actetactae ettgacetae 4920 220 gagaccgtgt ctggaacgcc gttggagact gcagcctccg ccgccgcttc agccgctgca 4980 221 gccaccqcc qcqqqattqt gactqacttt gctttcctga gcccqcttgc aagcagtgca 5040 222 getteeegtt cateegeeg egatgacaag ttgacggete ttttggcaca attggattet 5100 223 ttgacccggg aacttaatgt cgtttctcag cagctgttgg atctgcgcca gcaggtttct 5160 224 gcctgaagg cttcctccc tcccaatgcg gtttaaaaca taaataaaaa accagactct 5220 225 gtttggattt ggatcaagca agtgtcttgc tgtctttatt taggggtttt gcgcgcgcgg 5280 226 taggcccggg accagcggtc tcggtcgttg agggtcctgt gtattttttc caggacgtgg 5340 227 taaaggtgac tetggatgtt cagatacatg ggcataagce egtetetggg gtggaggtag 5400 228 caccactgca gagetteatg etgeggggtg gtgttgtaga tgatecagte gtageaggag 5460 229 cgctgggcgt ggtgcctaaa aatgtctttc agtagcaagc tgattgccag gggcaggccc 5520 230 ttggtgtaag tgtttacaaa gcggttaagc tgggatgggt gcatacgtgg ggatatgaga 5580 231 tgcatcttgg actgtatttt taggttgget atgtteeeag ecatateeet eeggggatte 5640 232 atgttgtgca gaaccaccag cacagtgtat ccggtgcact tgggaaattt gtcatgtagc 5700 233 ttagaaggaa atgcgtggaa gaacttggag acgcccttgt gacctccaag attttccatg 5760 234 cattequea taatqatqqc aatqqqccca cqqqcqqcqq cctqqqcqaa qatatttctg 5820 235 ggatcactaa cgtcatagit gtgttccagg atgagatcgt cataggccat ttttacaaag 5880 236 cgcgggcgga gggtgccaga ctgcggtata atggttccat ccggcccagg ggcgtagtta 5940 237 ccctcacaga tttgcatttc ccacgctttg agttcagatg gggggatcat gtctacctgc 6000 238 ggggcgatga agaaaacggt ttccggggta ggggagatca gctgggaaga aagcaggttc 6060 239 ctgagcaget gcgacttacc gcagccggtg ggcccgtaaa tcacacctat taccgggtgc 6120 240 aactggtagt taagagaget geagetgeeg teateeetga geagggggge eacttegtta 6180 241 ageatyteec tgactegeat gtttteeetg accaaateeg eeagaaggeg etegeegeec 6240

RAW SEQUENCE LISTING

DATE: 05/04/2000 TIME: 09:30:18

Input Set : A:\16153558.app

Output Set: N:\CRF3\05042000\I111911.raw

PATENT APPLICATION: US/09/111,911

242 agcgatagca gttcttgcaa ggaagcaaag tttttcaacg gtttgagacc gtccgccgta 6300 243 ggcatgcttt tgagcgtttg accaagcagt tccaggcggt cccacagctc ggtcacctgc 6360 244 totacggcat ctcgatccag catatotect cgtttcgcgg gttggggcgg ctttcgctgt 6420 245 acqqcaqtaq tcqqtqctcq tccaqacqqq ccaqqqtcat gtctttccac gggcqcaggg 6480 246 tectogteag cytagtetgg gteacgytga aggggtgeg tecgggetge gegetggeca 6540 247 gggtgegett gaggetggte etgetggtge tgaagegetg eeggtetteg eectgegegt 6600 248 cggccaggta gcatttgacc atggtgtcat agtccaggcc ctccgcggcg tggcccttgg 6660 249 cgcgcagctt gcccttggag gaggcgccgc acgaggggca gtgcagactt ttgagggcgt 6720 250 agagettggg egegagaaat accgatteeg gggagtagge ateegegeeg eaggeeeege 6780 251 agacggtctc gcattccacg agccaggtga gctctggccg ttcggggtca aaaaccaggt 6840 252 ttcccccatg ctttttgatg cgtttcttac ctctggtttc catgageogg tgtccacgct 6900 253 cggtgacgaa aaggctgtcc gtgtccccgt atacagactt gagaggcctg tcctcgagcg 6960 254 gtgttccgcg gtcctcctcg tatagaaact cggaccactc tgagacaaag gctcgcgtcc 7020 255 aggccagcac gaaggaggct aagtgggagg ggtagcggtc gttgtccact agggggtcca 7080 256 ctcgctccag ggtgtgaaga cacatgtcgc cctcttcggc atcaaggaag gtgattggtt 7140 257 tgtaggtgta ggccacgtga ccgggtgttc ctgaaggggg gctataaaag ggggtgggg 7200 258 cgcgttcgtc ctcactctct tccgcatcgc tgtctgcgag ggccagctgt tggggtgagt 7260 256 eggyttegte tetactetet teegeatege tytetgegag gyctagetyt tyggytydyt 7200 259 actecetetg aaaageggge atgaettetg egetaagatt gteagtttee aaaaaegagg 7320 260 aggatttgat atteaeetgg eeegeggtga tycetttgag gytggeegea teeatetggt 7380 261 cagaaaagac aatetttttg ttgtcaaget tggtggcaaa cgacccgtag agggcgttgg 7440 262 acagcaactt ggcgatggag cgcagggttt ggtttttgtc gcgatcggcg cgctccttgg 7500 263 ccgcgatgtt tagctgcacg tattcgcgcg caacgcaccg ccattcggga aagacggtgg 7560 264 tgcgctcgtc gggcaccagg tgcacgcgcc aaccgcggtt gtgcagggtg acaaggtcaa 7620 265 cgctggtggc tacctctccg cgtaggcgct cgttggtcca gcagaggcgg ccgcccttgc 7680 266 gcgagcagaa tggcggtagg gggtctagct gcgtctcgtc cggggggtct gcgtccacgg 7740 267 taaagacccc gggcagcagg cgcgcgtcga agtagtctat cttgcatcct tgcaagtcta 7800 268 gcgcctgctg ccatgcgcgg gcggcaagcg cgcgctcgta tgggttgagt gggggacccc 7860 269 atggcatggg gtgggtgagc gcggaggcgt acatgccgca aatgtcgtaa acgtagaggg 7920 270 getetetgag tattecaaga tatgtagggt ageatettee accgeggatg etggegegea 7980 271 cgtaatcgta tagttcgtgc gagggagcga ggaggtcggg accgaggttg ctacgggcgg 8040 272 gctgctctgc tcggaagact atctgcctga agatggcatg tgagttggat gatatggttg 8100 273 gacgctggaa gacgttgaag ctggcgtctg tgagacctac cgcgtcacgc acgaaggagg 8160 274 cgtaggagtc gcgcagcttg ttgaccagct cggcggtgac ctgcacgtct agggcgcagt 8220 275 agtocagggt treetigatg atgreatact tarcetgree ettittite cacagetege 8280 276 ggttgaggac aaactetteg eggtetttee agtactettg gateggaaac cegteggeet 8340 277 ccgaacggta agagcctagc atgtagaact ggttgacggc ctggtaggcg cagcatecet 8400 278 tttctacggg tagcgcgtat gcctgcgcgg ccttccggag cgaggtgtgg gtgagcgcaa 8460 279 aggtgtcct gaccatgact ttgaggtact ggtatttgaa gtcagtgtcg tcgcatccgc 8520 280 cctgctccca gagcaaaaag tccgtgcgct ttttggaacg cggatttggc agggcgaagg 8580 281 tgacatcgtt gaagagtate ttteeegege gaggeataaa gttgegtgtg atgeggaagg 8640 282 gtcccggcac ctcggaacgg ttgttaatta cctgggcggc gagcacgatc tcgtcaaagc 8700 283 cgttgatgtt gtggcccaca atgtaaagtt ccaagaagcg cgggatgccc ttgatggaag 8760 284 gcaatttttt aagtteeteg taggtgaget etteagggga getgageeeg tgetetgaaa 8820 285 gggcccagtc tgcaagatga gggttggaag cgacgaatga gctccacagg tcacgggcca 8880 286 ttagcatttg caggtggtcg cgaaaggtcc taaactggcg acctatggcc attititictg 8940 287 gggtgatgca gtagaaggta agcgggtctt gttcccagcg gtcccatcca aggttcgcgg 9000 288 ctaggtcteg egeggcagte actagagget cateteegee gaacttcatg accageatga 9060 289 agggcacgag ctgcttccca aaggccccca tccaagtata ggtctctaca tcgtaggtga 9120 290 caaagagacg ctcggtgcga ggatgcgagc cgatcgggaa gaactggatc tcccgccacc 9180

DATE: 05/04/2000 TIME: 09:30:19

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/111,911

Input Set : A:\16153558.app
Output Set: N:\CRF3\05042000\II11911.raw